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Comment on gmd-2020-367

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Community comment on "Understanding each other's models: an introduction and a standard representation of 16 global water models to support intercomparison, improvement, and communication" by Camelia-Eliza Telteu et al., Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2020-367-CC2>, 2021

In the opening paragraph to section 4 (Review....), the authors present a short summary of some key developments in global water modeling. They also state on lines 290-92 "...Dooge (1982) identified the two major challenges of global hydrology: scaling and parameterization. Eagleson (1986) declared the necessity of global-scale hydrology. Inevitably, during the 1990s, the first global hydrological models were developed (Alcamo et al., 1997; Vörösmarty et al., 1998, Arnell, 1999)."

While I realize the purpose of the current work is not to present an exhaustive review, the authors' statement assigning the decade of the 1990's to the development of the first such models is historically incorrect. These models, as well as essential inputs, calibration/validation data sets, and modeling application studies were in fact first developed during the 1980s, motivated in no small measure by the proposals made by Dooge and Eagleson. I provide a short list of publications that support this assertion. All of these pre-date, and some substantially, the first paper in the list which appeared in the late 1990s (Alcamo et al. 1997--which I note parenthetically appears not to have been published in the peer-reviewed literature).

In keeping with the comment of Dooge on calibration and scaling I believe that the paper by Federer et al. 1996 might be particularly relevant to cite. It is also important to note that without substantial effort to create digital archives for calibration and validation data, the community's progress toward a global-scale capability would likely have languished for quite some time. For this reason, I include in the list a global hydrological data compendium that was broadly adopted by the community for this purpose after it was made available in 1996. It might also be noted that the first global-scale application study of the impact of hydraulic engineering (i.e., on dams and reservoirs) was published in 1997; an absolute requirement was the use of these first generation models and their supporting digital hydrologic data archive.

I would anticipate that the authors be kind enough to acknowledge this shortcoming.

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